

**REMARKS**

***I. Double Patenting Rejection***

The entry of a Terminal Disclaimer herewith renders this rejection moot.

***II. Rejection of Claims 50-53 & 57-58 under 35 U.S.C. § 103***

Claims 50-53 and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over the non-patent literature, Bayliss, et al., “The Combined Effect of Hydrogen Peroxide and Ultraviolet Irradiation on Bacterial Spores”, Journal of Applied Bacteriology 47:263-269 (1979) in view of Blidschun et al. (U.S. Patent No. 4,680,163) and Peltier (U.S. Patent No. 5,382,410). For the reasons set forth below, Applicant respectfully disagrees and requests that the Examiner reconsider these rejections.

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP § 2143. Because there is no suggestion or motivation to combine the references, the Examiner has failed to make a *prima facie* case for obviousness under 35 U.S.C. § 103(a) with regard to claim 50.

The mere fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness. MPEP § 2143.01. “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching

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or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so.” In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992), quoting ACS Hosp. Systems, Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984) (Emphasis in original).

For all of the section 103 rejections detailed below, the Examiner has combined and/or modified references based on impermissible hindsight reasoning without any teaching, suggestion, or motivation in the references or in the knowledge of one skilled in the art. It is respectfully submitted that the Examiner is unable to point to any information in the references themselves which motivates the stated combinations or modifications and relies entirely on information from the present application itself. Even when these references are combined and/or modified, the combined and/or modified references fail to teach or suggest all of the claim limitations.

Finally, Applicant submits that, where the Examiner has based the obviousness rejection on a combination of more than one reference, these references come from fields of art that are not analogous to one another nor to Applicant’s field of art and thus it would not be obvious for one skilled in Applicant’s field of art to combine such disparate references. MPEP § 2141.01(a) (“To rely on a reference under 35 U.S.C. § 103, it must be analogous prior art.”).

Bayliss et al. and Blidschun et al. disclose methods and apparatus for decontaminating small objects or small volumes of material in controlled environments, either a research laboratory (Bayliss) or a liquid packaging facility (Blidschun). Neither of these references,

however, suggests or motivates practicing these methods or using these apparatuses on larger objects, volumes, or spaces, specifically those large enough to be person-occupiable.

Peltier discloses methods and apparatus for dispersal of electrostatically charged materials into air handling systems and other building spaces. However, nowhere does Peltier teach, suggest, or motivate illuminating the areas covered with dispersed material with light to cause chemical reactions to decontaminate the areas.

Taken as a whole, Bayliss et al., Blidschun et al., and Peltier fail to teach, suggest, or motivate spraying an electrically charged photosensitizer onto the contaminated surface of a person-occupiable space. While Peltier describes methods of applying substances to the interior spaces of buildings, one skilled in the art would not be taught by the combination of these references to scale up the methods of Bayliss et al. to perform photosensitized disinfection in a person-occupiable space. Bayliss et al. do not disclose spraying of objects – the disinfectant solution is applied as bulk liquid to the samples (p. 264, “Spores at  $3 \times 10^7$  to  $5 \times 10^8$  /ml were suspended in 0.1 M-sodium phosphate buffer pH 7.0 and up to 2.5 g  $H_2O_2$ /100 ml (Analar, B.D.H.)” prior to UV irradiation). The methods taught by Blidschun et al., designed for sterilizing small containers in the controlled environment of a factory, are inapplicable to person-occupiable spaces and thus do not teach, motivate, or suggest to those skilled in the art to apply such techniques to large-scale operations in unpredictable and variable person-occupiable spaces. Finally, the methods of Peltier do not disclose spraying of materials; instead the materials are “dispersed” or “vaporized” and released into ambient air or an air duct.

**Claim 58**

The Examiner has rejected claim 58 as obvious, stating that the use of a “carrier gas” as taught in Blidschun et al. is the same as the claimed use of “carrier particles.” Although Applicants respectfully disagree that a gas can be considered a “particle”, claim 58 has nonetheless been amended to help clarify this point, specifying “solid or liquid carrier particles.”

This amendment of claim 58 is well supported in the originally-filed application. Paragraph [0040] states that “[s]olid or liquid carrier particles may be added to aid in the application of and dispersion of photosensitizer.”

Thus in view of this amendment, Applicant respectfully submits that the rejection has been overcome and requests that the Examiner withdraw this rejection.

***III. Rejection of Claims 54 & 55 under 35 U.S.C. § 103***

Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over the non-patent literature, Bayliss, et al. in view of Blidschun et al. and Peltier and further in view of Horowitz et al. (U.S. Patent No. 5,232,844). For the reasons set forth below, Applicant respectfully disagrees and requests that the Examiner reconsider these rejections.

As far as the combination of Bayliss et al., Blidschun et al., and Peltier, the Examiner is referred to the arguments put forth above against these references and the lack of *prima facie* case being made for rejection in view of these references. Given that Horowitz et al. also comes from a non-analogous field of art, one skilled in the art of the present application would not have been motivated to combine the teachings of Horowitz et al. with the other cited references. Thus the Examiner has failed to make a *prima facie* case for rejection under section 103 for claims 54

and 55 and as such Applicant respectfully requests that this rejection be withdrawn.

#### ***IV. Rejection of Claim 56 under 35 U.S.C. § 103***

Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over the non-patent literature, Bayliss, et al. in view of Blidschun et al. and Peltier and further in view of Bowling et al. (U.S. Patent No. 4,051,058). For the reasons set forth below, Applicant respectfully disagrees and requests that the Examiner reconsider this rejection.

As far as the combination of Bayliss et al., Blidschun et al., and Peltier, the Examiner is referred to the arguments put forth above against these references and the lack of *prima facie* case being made for rejection in view of these references. Given that Bowling et al. also comes from a non-analogous field of art, one skilled in the art of the present application would not have been motivated to combine the teachings of Horowitz et al. with the other cited references. Thus the Examiner has failed to make a *prima facie* case for rejection under section 103 for claim 56 and as such Applicant respectfully requests that this rejection be withdrawn.

#### ***V. Conclusion***

Accordingly, Applicant respectfully submits that all of the independent and dependent claims are allowable over the prior art of record.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present

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application is in condition for allowance. If the Examiner disagrees, he is invited to telephone the undersigned at the number provided so that an interview may be scheduled.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Grant D. Kang", written over a horizontal line.

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